Small Business Innovation Research/Small Business Tech Transfer

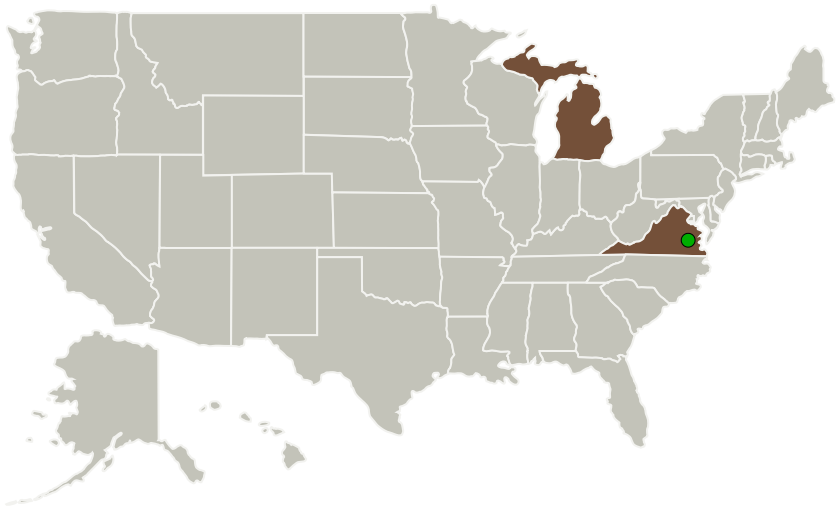
Agile Etalon Filter for Differential Absorption LIDAR, Phase I

Completed Technology Project (2016 - 2016)

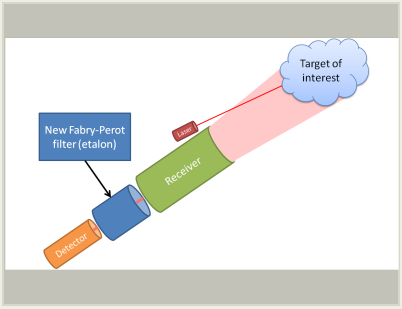
Project Introduction

Modern sensing systems often are required to pick out a very specific wavelength in a sea of other light (such as in daylight), making precise optical filtering a vital part of many sensing systems. Michigan Aerospace Corporation (MAC) plans to design, build and test an agile, frequency-tunable Fabry-Perot interferometer (etalon) for use as an optical filter of background light as part of a Differential Absorption LIDAR (DIAL) system. MAC's extensive history with designing and building rugged etalons for NASA and other customers will be key to this effort. Phase I will involve the design of this specific etalon and the testing of a faster method for precisely tuning it. Phase II will then involve the construction and test of the etalon.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Michigan Aerospace Corporation	Lead Organization	Industry	Ann Arbor, Michigan
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



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Primary U.S. Work Locations	
Michigan	Virginia

Project Transitions

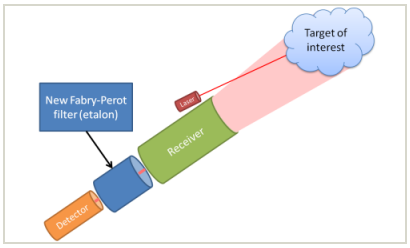
June 2016: Project Start

December 2016: Closed out

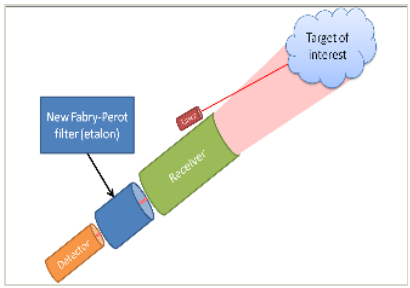
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140024)*

Images



Briefing Chart Image
Agile Etalon Filter for Differential Absorption LIDAR, Phase I *(https://techport.nasa.gov/image/130657)*



Final Summary Chart Image
Agile Etalon Filter for Differential Absorption LIDAR, Phase I Project Image *(https://techport.nasa.gov/image/134930)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Michigan Aerospace Corporation

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

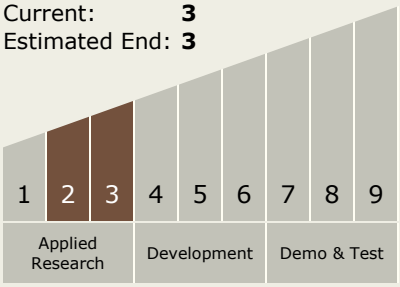
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
William E Johnson

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Completed Technology Project (2016 - 2016)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.1 Field and Particle Detectors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System